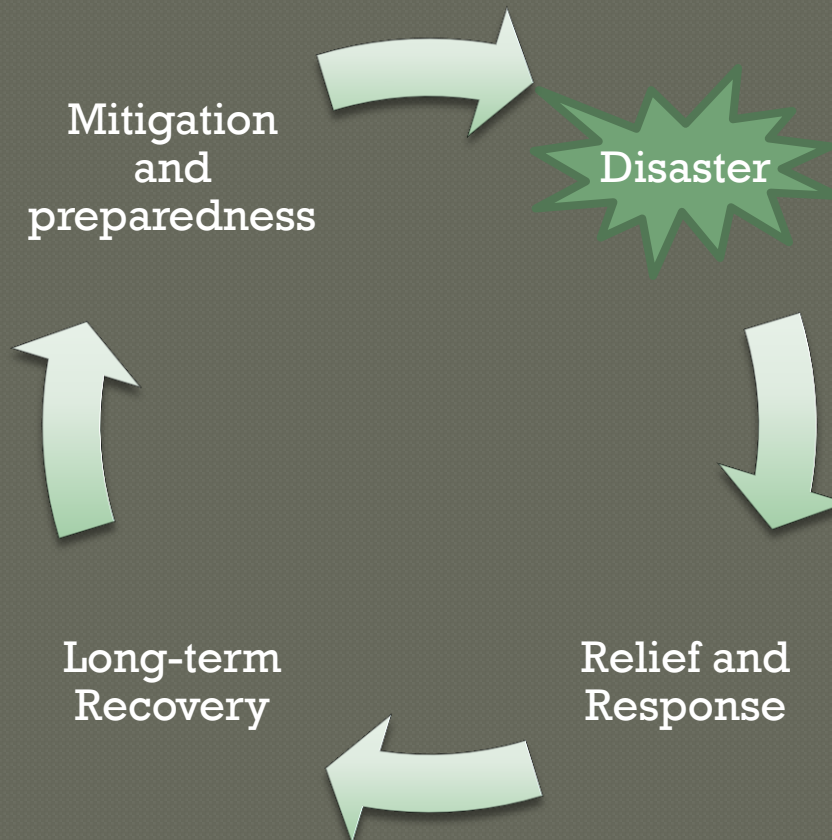


Beyond Disaster Response to Recovery & Resilience

Arrietta Chakos
Urban Resilience Strategies
May 31, 2013
Bay Area Planning Directors
Association

What is Disaster Resilience?

- A resilient community can grow, adapt and restore itself in the aftermath of disruptive change

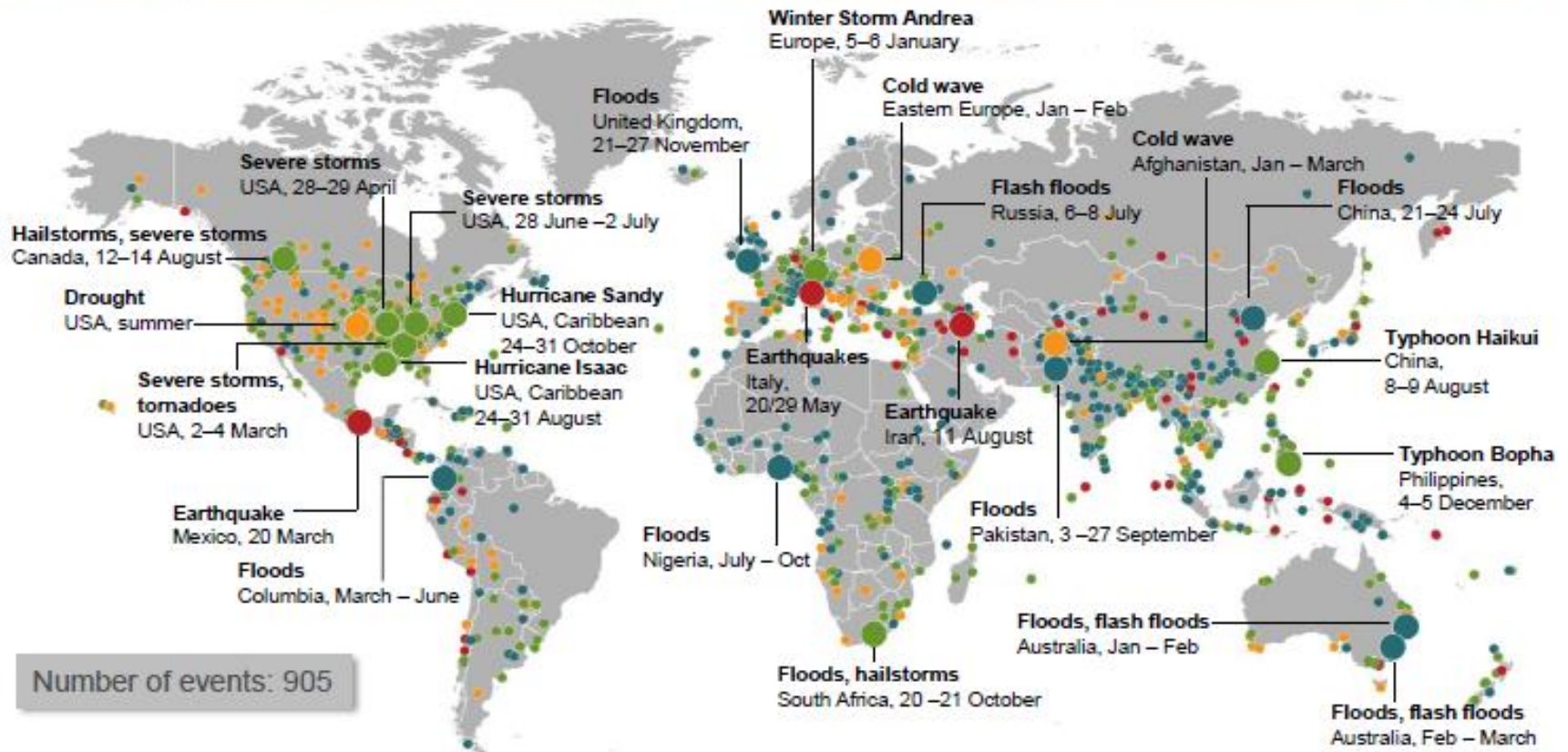


adapted from ABAG Earthquake & Hazards Program

Complex Urban Disasters

- ◉ Vulnerability of urban systems
- ◉ Multi-hazard disaster planning and energy grid disruption issues
- ◉ Varied experience and actions on the disaster/disruption continuum slow development of a “recipe” for resilience

Natural Loss Events, 2012 World Map



Hurricane Sandy 2012

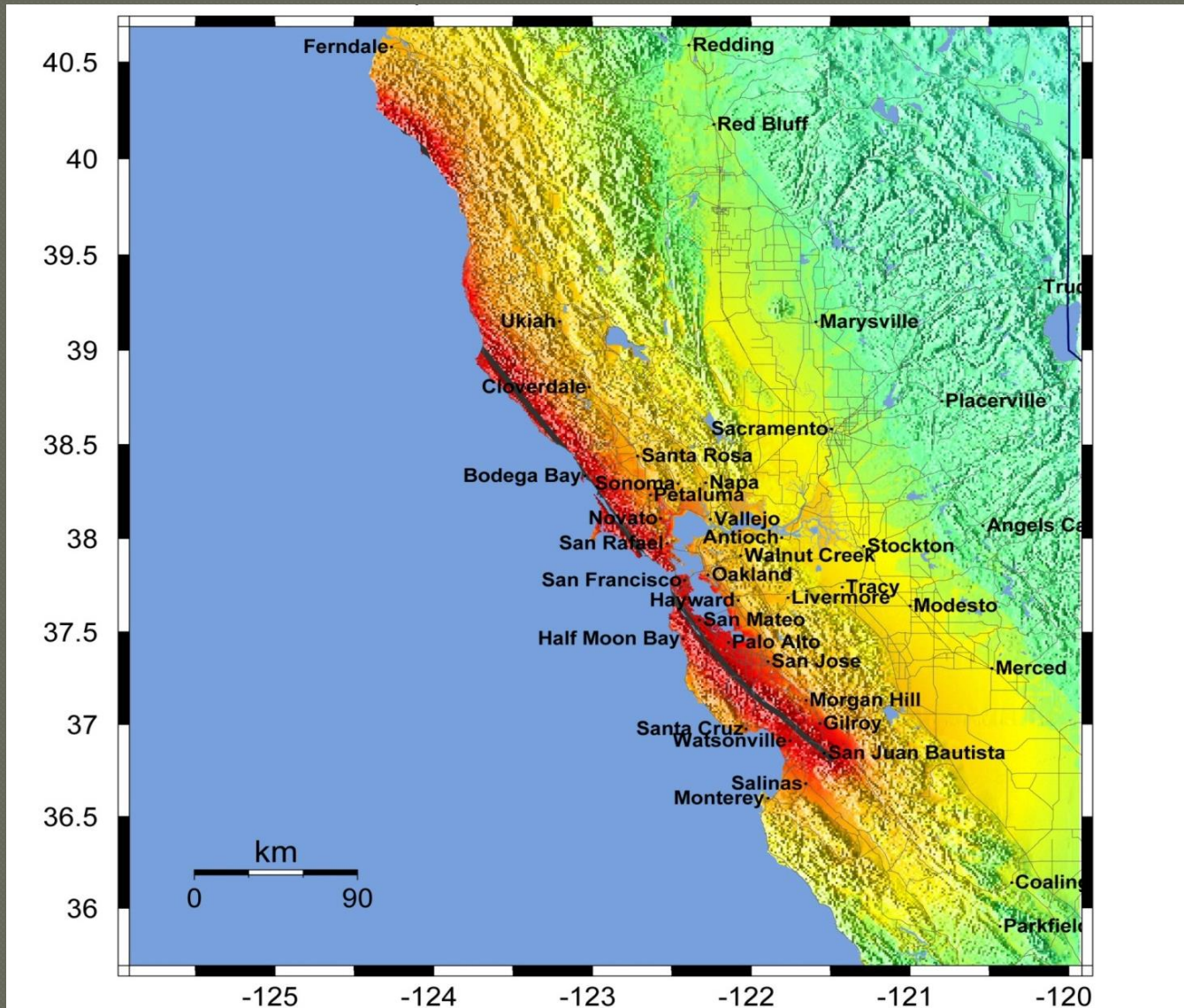


Oklahoma's 2013 devastation



Earthquake Scenario

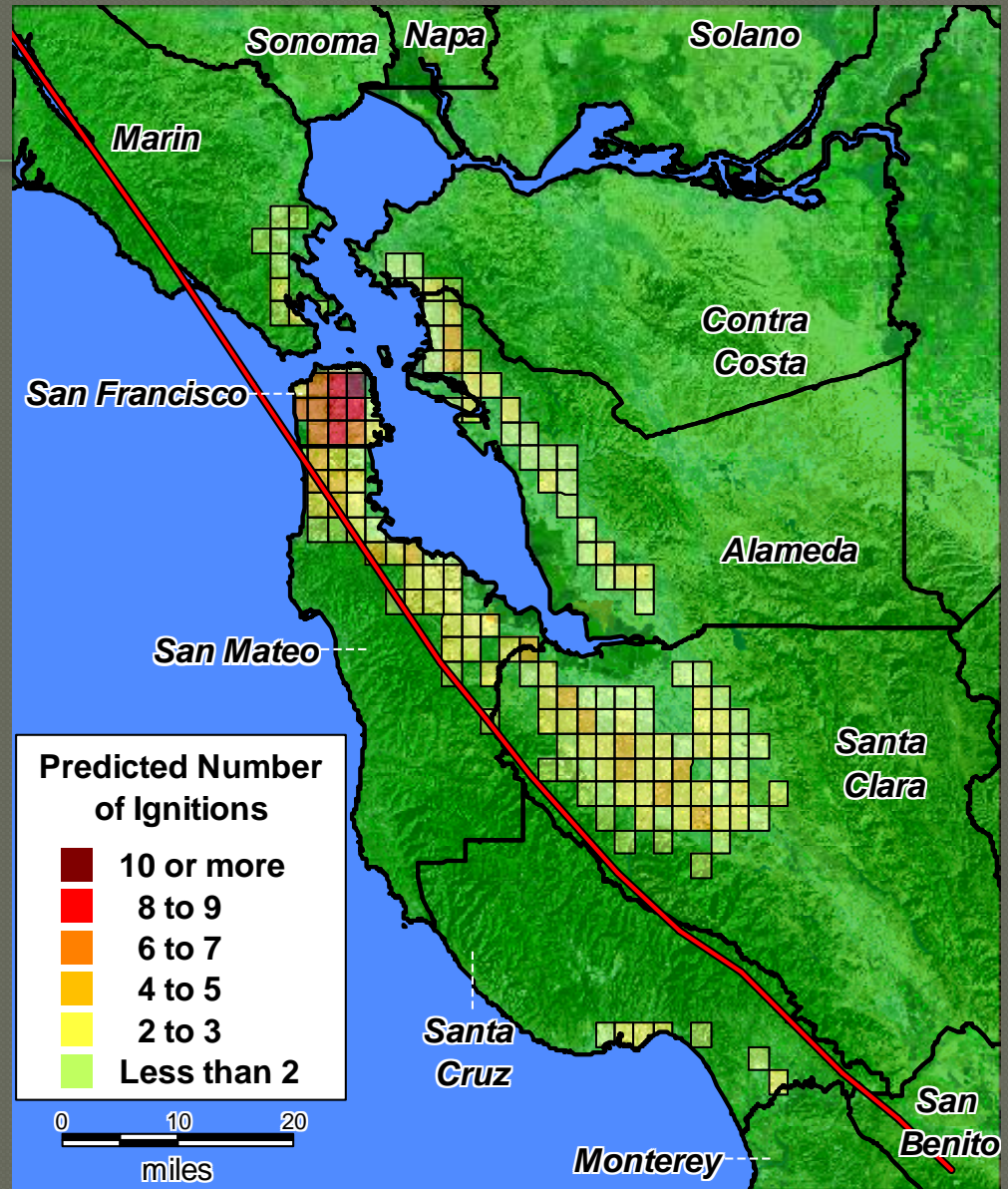
M 7.9 on San Andreas Fault



Fire Ignitions

- 500 to 600 Fires
- About 100 in San Francisco

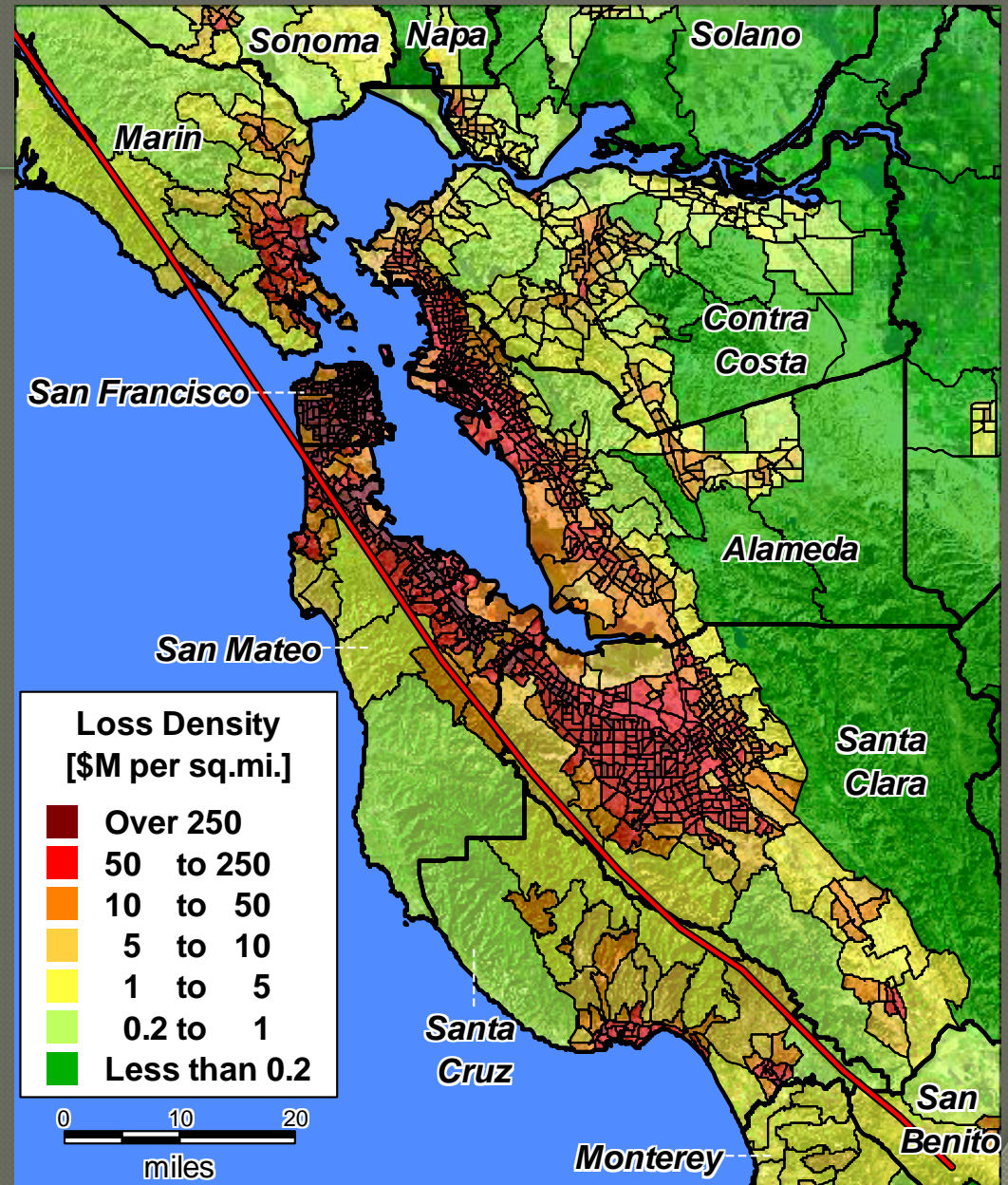
*Data Provided by HAZUS™, with support from PBS&J (Jawhar Bouabid), Charles Kircher & Associates, ABS Consulting (Hope Seligson), the Cities of San Jose, Berkeley and San Francisco, and OSHPD. Funding for this Scenario was provided by an Urban Area Security Initiative Grant to the City and County of San Francisco



Economic Impact

- Over \$120 Billion of Building Losses
- Direct and Indirect Losses will Exceed \$150 Billion

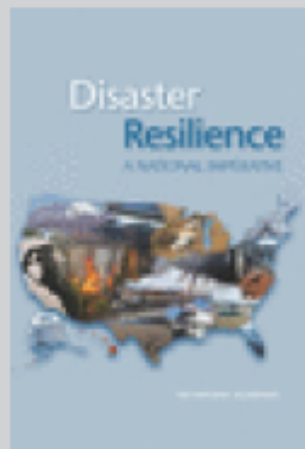
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Federal Resilience Initiatives

- ◉ Presidential Policy Directives and the White House Office of Resilience
- ◉ National Academy of Sciences long-term study on national resilience capacity
- ◉ Federal Emergency Management Agency National Recovery Framework

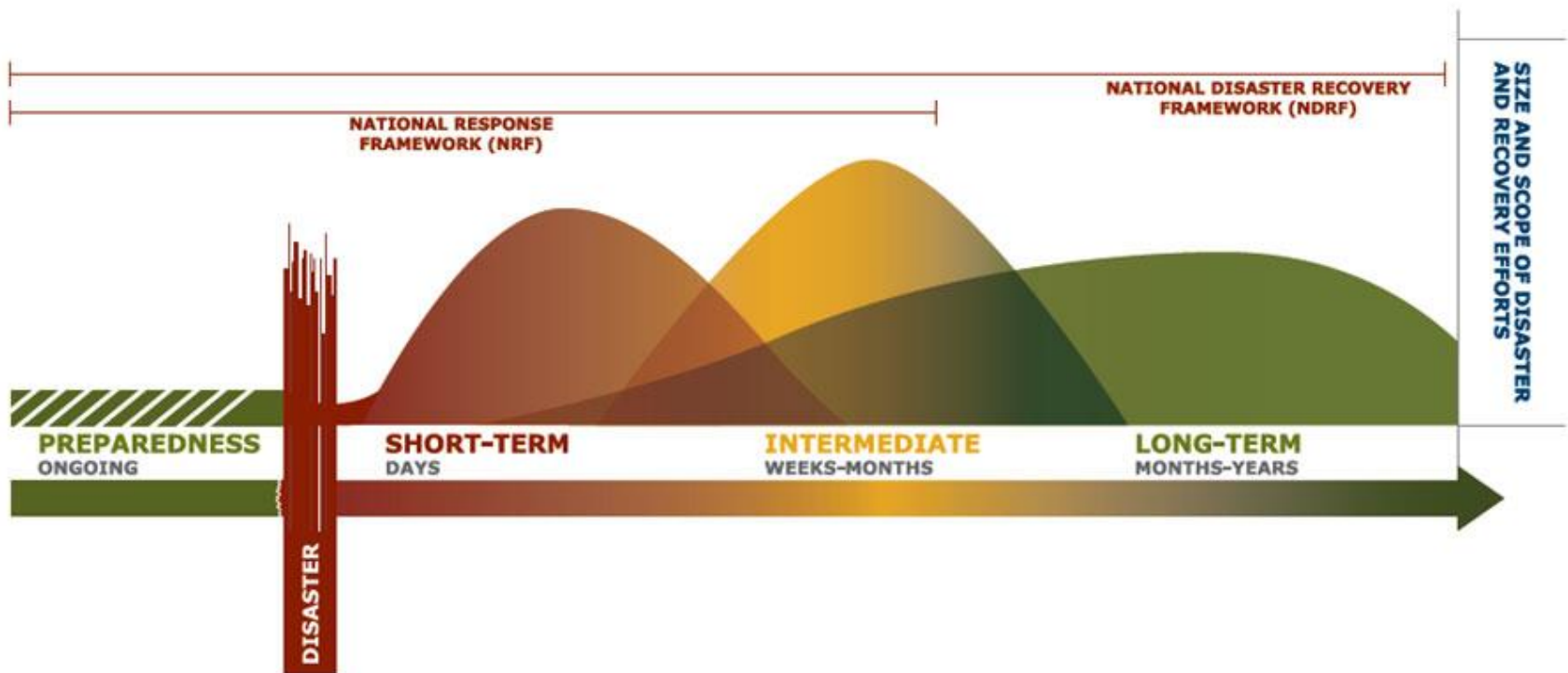
National Academies of Science 2012 Resilience Study



Disaster Resilience: A National Imperative

Long-term recovery in the disaster life-cycle

FIGURE 1. RECOVERY CONTINUUM – DESCRIPTION OF ACTIVITIES BY PHASE



National Resilience Initiatives

- ◉ Rockefeller Foundation's 100 city program to launch global resilience
- ◉ National Association of Counties new resilience effort launches this fall
- ◉ Community And Regional Resilience Institute—CARRI's national tool kit
- ◉ ecoAmerica program in partnership with the MacArthur Foundation

100 Resilient Cities: A Call to Action



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[Mobile Site](#)

[OUR FOCUS](#) | [OUR WORK](#) | [OUR CENTENNIAL](#) | [ABOUT US](#)

100 RESILIENT CITIES CENTENNIAL CHALLENGE



As natural and man-made shocks and stresses grow in frequency, impact and scale, with the ability to ripple across systems and geographies, cities are largely unprepared to respond to, withstand, and bounce back from disasters.

With more than 75 percent of people expected to live in cities by 2050, public and private sector leaders are expressing an increasing desire to build greater resilience, yet many have neither the technical expertise nor the financial resources to create and execute resilience strategies on a city-wide scale, in a way that addresses the need of the poor or vulnerable people.



ecoAmerica's Climate Initiative

What we will do together

Building a tipping point for climate change action in America

MomentUs Networks and Leadership:

Municipalities
Faith
Higher Education
Eco-Humanitarian
Health
Business
New Constituencies

Leadership Council
Donor Council
Marketing Council
Research Council
ecoAmerica Board



2013



2014



2015

Spring 2013
Sector Pre-org
Meetings

Summer 2013
Leadership
Meeting

Fall 2013
Sector
Summits

Winter 2014
Leadership
Meeting

Spring 2014
All-Sector
Summit

Bay Area Resilience Efforts

- ABAG examines how 9 counties, 101 cities can incorporate resilience strategies
- Joint Policy Committee's Resilience Initiative examines climate & sustainability action
- California Energy Commission's Energy Assurance Initiative in 5 Bay Area cities

ABAG's Resilience Initiative



Association of Bay
Area Governments

EARTHQUAKE AND HAZARDS PROGRAM

Earthquake and Hazards Home

Residents

Businesses

Local Governments

Professionals & Researchers

Students

Regional Disaster Resilience Initiative

Mitigation
Recovery

Hazard Maps and Information

Earthquake Shaking
Liquefaction
Active Faults
Landslides
Tsunamis
HazMat Incidents
Floods
Wildfires
Erosion
Sea Level Rise
Dam Failure Inundation

Housing

Housing Losses
Guide to Vulnerable
Housing Types
Soft-Story Buildings

Infrastructure

Transportation Losses
Water/Wastewater System
Disruptions

Bay Area Regional Disaster Resilience Initiative



Please take a few minutes to complete this [survey](#). The results will help guide the Regional Disaster Resilience Initiative.

Building a Disaster Resilient Bay Area

The Bay Area has been subject to a variety of significant disasters and incidents over the years, ranging from fires to earthquakes to flooding. Planning for major disasters and events is therefore a priority for many Bay Area jurisdictions and organizations, and there is a wide array of studies, plans, procedures, and tools that have been developed focusing on disaster preparedness, response, and mitigation. These efforts address earthquakes as well as other natural and manmade threats and focus on both the whole region and individual jurisdictions. Tabletop exercises, functional exercises, and drills are routine events, as are cross-sector and multidisciplinary workshops on specific issues.

Focus on recovery planning has historically been limited and Bay Area recovery plans and studies that have been developed tend to be locally rather than regionally focused. In order to adequately address broad regional objectives for recovery, we need more than a collection of local plans. A regional strategy is most effectively developed when it emerges from local priorities and recognition of the need for jurisdictional collaboration.

Resilience Partners



San Jose

Build Community Well-being

- Resilience starts with people and social/community connection
- Dealing with disruption in adaptive ways is **crucial**
- A restoration plan for essential community systems—power, water systems—is a key element of resilience

Baseline Resilience Planning

- Evaluate potential disruptions from natural & human generated disasters
- Strengthen sectoral partnerships with executed MOUs
- Implement resilience action planning through local General, mitigation & climate plans—use what is at hand

Cultivating Resilience Planning

- Resilience allows a community to consider its values:
 - What do we want to pass to our children (heritage, debt, community character, economic strength)?
 - How is this community interconnected and interdependent?
 - How are these values woven into daily planning?

America's Infrastructure Report Card



2013 REPORT CARD for AMERICA'S INFRASTRUCTURE

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

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- > GRADES
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LAUNCH THE REPORT CARD >

AMERICA'S GPA:

D⁺

The American Society of Civil Engineers is committed to protecting the health, safety, and welfare of the public, and as such, is equally committed to improving the nation's public infrastructure. To achieve that goal, the Report Card depicts the condition and performance of the nation's infrastructure in the familiar form of a school report card—assigning letter grades that are based on physical condition and needed fiscal investments for improvement.

ESTIMATED INVESTMENT NEEDED BY 2020:

\$3.6 TRILLION

FEMA' s 4:1 Investment Ratio

“The analysis ... of FEMA grants awarded during the (MMC) study period indicates that **a dollar spent on mitigation saves society an average of \$4.**”

—from the 2006 study published by the U.S.
MultiHazard Mitigation Council